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<b>Subject:</b>	Application Serial No.: 09/851,042 Filed: May 8, 2001 Applicant: Petrea, et al. Title: ANTIMICROBIAL POLYURETHANE FILMS Attorney Docket: 5236		
<b>Date:</b>	January 24, 2006		
<b>Copies:</b>	<b>Pages:</b> 15 (including cover)		

### Comments:

Transmittal Sheet- 1 page

Brief on Appeal-14 pages

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Randy D. Petrea, Robert L. Schuette, and Shirley A. Whiteside  
Serial Number: 09 / 851,042  
Filed: May 8, 2001  
For: **ANTIMICROBIAL POLYURETHANE FILMS**  
Group Art Unit: 1616  
Examiner: Sharmila S. Gollamudi

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**BRIEF ON APPEAL UNDER 37 CFR 1.192**

Commissioner for Patents  
PO Box 1450  
Alexandria, Virginia 22313-1450

## CERTIFICATE OF FACSIMILE TRANSMISSION UNDER 37 C.F.R. § 1.8(d)

I hereby certify that this correspondence is being transmitted by facsimile to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, at (571) 273-8300.

Date: January 24, 2006

Signature: 

Name: Melody Towary

Sir:

The following Appeal Brief is submitted pursuant to the Notice of Non-Compliant Appeal Brief dated January 13, 2006.

**I. REAL PARTY IN INTEREST**

The above-referenced application is the subject of an assignment to Milliken & Company, located at 920 Milliken Road, Spartanburg, South Carolina, which is the real party in interest.

**II. RELATED APPEALS & INTERFERENCES**

Appellant is not aware of any other appeal or interference that will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

**III. STATUS OF CLAIMS**

Claims 34 and 36 - 42 have been rejected and are the subject of this Appeal.

**IV. STATUS OF AMENDMENTS**

No amendments were filed after the Final Office Action.

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**V. SUMMARY OF INVENTION**

The subject application is directed to polyurethane films containing silver-based antimicrobial formulations. The formulations comprise antimicrobial compounds that provide good color characteristics to the polyurethane film (i.e. the film does not exhibit undesirable browning and/or yellowing).

Claim 34 is directed to an extruded anti-tack polyurethane film having a thickness from 10 to about 500 mils and comprising a silver-based inorganic antimicrobial compound. The silver-based antimicrobial compound is selected from the group consisting of silver zirconium phosphate compounds, silver-based zeolites, silver-based glasses, and any mixtures thereof. The antimicrobial compound is located in discrete areas of the extruded film such that some of the antimicrobial compound is present at and extends outward from the exterior surface of the extruded film, and some of the antimicrobial compound is present within the interior of the extruded film. The extruded film exhibits a tackiness that is less than that of the same type of extruded polyurethane extruded film without silver-based inorganic antimicrobial compound present at and extending outward from the surface of the film. The extruded film does not require the presence of any other type of anti-tack surface coatings or additives in order to exhibit such anti-tack properties. The features of claim 1 are described, for example, in the specification on page 4 (lines 7 – 20), page 5 (lines 2 – 8) and page 6 (lines 1 – 3).

Claim 36 is directed to the film described in claim 34 wherein the antimicrobial compound is at least one silver zirconium phosphate compound. The features of claim are described, for example, in the specification on page 5, lines 2 – 8.

Claim 37 is directed to the film of claim 34 wherein the formulation does not include any added organic bactericide compound. The features of claim 37 are described, for example, in the specification on page 9, under the section entitled, "Polyurethane Film Production."

Claim 38 is directed to the film of claim 34 wherein the film exhibits a cohesive property with either itself or a different film of the same type as measured by a sliding block pull tension of below about 150 grams as measured by a sliding block friction procedure. The features of claim 38 are described, for example, in the specification on page 7, line 14 to page 8, line 7.

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Claim 39 is directed to the film of claim 38 wherein the film exhibits a cohesive property with either itself or a different film of the same type as measured by a sliding block pull tension of below about 100 grams as measured by a sliding block friction procedure. The features of claim 39 are described, for example, in the specification on page 7, line 14 to page 8, line 7.

Claim 40 is directed to the film of claim 39 wherein the film exhibits a cohesive property with either itself or a different film of the same type as measured by a sliding block pull tension of below about 90 grams as measured by a sliding block friction procedure. The features of claim 40 are described, for example, in the specification on page 7, line 14 to page 8, line 7.

Claim 41 is directed to the film of claim 40 wherein the film exhibits a cohesive property with either itself or a different film of the same type as measured by a sliding block pull tension of below about 75 grams as measured by a sliding block friction procedure. The features of claim 41 are described, for example, in the specification on page 7, line 14 to page 8, line 7.

Claim 42 is directed to the film of claim 41 wherein the film exhibits a cohesive property with either itself or a different film of the same type as measured by a sliding block pull tension of below about 65 grams as measured by a sliding block friction procedure. The features of claim 42 are described, for example, in the specification on page 7, line 14 to page 8, line 7.

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

- (A) Claims 34 and 37 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 8 of US Patent No. 6,479,144.
- (B) Claims 34, 36, 38 - 42 stand rejected under 35 USC Section 102(b) as being anticipated by Katsura et al. (US Patent No. 5,941,369).
- (C) Claims 34 and 36 - 42 stand rejected under 35 USC 103(a) as being unpatentable over Krall et al. (US Patent No. 5,976,562) in view of JP 09002537.
- (D) Claims 34 and 36 - 42 stand rejected under 35 USC 103(a) as being unpatentable over JP 11-028797 in view of JP 09002537.

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**VII. ARGUMENT**

- A. Claims 34 and 37 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 8 of US Patent No. 6,479,144.**

The Office has rejected Claims 34 and 37 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 8 of US Patent No. 6,479,144.

The Office states that although the conflicting claims are not identical, they are not patentably distinct from each other since the US patent claims the genus and the instant application claims the species. More specifically, the instant polyurethane falls within the broad scope of the US patent's spandex fiber, since the US patent defines the term spandex as "any standard polyurethane-type fibers" (column 4, lines 12-13). Therefore, the rejected claims are obvious over one another.

Appellant has stated (in the Amendment and Response dated May 6, 2004) that it is willing to file a terminal disclaimer with regard to US Patent No. 6,479,144, once all other issues of patentability have been resolved.

- B. Claims 34, 36 and 38 – 42 stand rejected under 35 USC Section 102(b) as being anticipated by Katsura et al. (US Patent No. 5,941,369).**

Claims 34, 36 and 38 – 42 are rejected under 35 USC Section 102(b) as being anticipated by Katsura et al.

The Office has cited Example 1 of the reference, which discloses a polyurethane film having a thickness of 11.8 mils for adhesion to a polyester carcass for use as a food-conveying belt. The antimicrobial and antifungal agent cited in this reference is bis-(2-pyridylthio-1-oxido)-zinc. The Office has also cited comparative Example 2, which discloses Example 1 wherein silver-zirconium phosphate and antifungal are substituted for the polyurethane film. The Office predicates the rejection on the polyester film intermediate product before its addition to the

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polyester adhesion sheet and further submits that the anti-tack and cohesive properties are inherent since the prior art and the instant invention are not distinguishable.

Appellants note that MPEP § 2131 specifically states, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Appellants respectfully submit that this rigorous standard is not met by the teachings of Katsura.

Appellants note that the resin described in Katsura is expressly taught to include a dispersing agent. Specifically, the dispersing agent is added in order to effect uniform dispersion or dissolution of the antimicrobial compound and other constituents in the resin by improving their fluidity and dispersion ability (See col. 5, lines 27-30). Moreover, Katsura specifically teaches that the antimicrobial powder should be of such a size as to provide uniform dispersion within the resin (See col. 2, lines 58-63). Thus, Katsura focuses significant efforts on achieving a uniform antimicrobial dispersion.

The instant invention expressly claims an extruded film comprising a silver-based inorganic antimicrobial compound located in discrete areas of said film. This appears to be in clear contrast to the uniform dispersion advocated by the teachings of Katsura. Thus, as best understood, Katsura does not teach every element of Appellants' claims. Accordingly, it is submitted that the anticipation rejection should not be maintained and reversal of such rejection is respectfully requested.

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**C. Claims 34 and 36 – 42 stand rejected under 35 USC 103(a) as being unpatentable over Krall et al. (US Patent No. 5,976,562) in view of JP 09002537.**

Claims 34 and 36 – 42 are rejected under 35 USC Section 103(a) as being unpatentable over Krall et al. in view of JP 09002537.

The Office's argument is as follows:

*Krall et al. disclose a polyurethane film of 0.25mm thickness with silver. The antimicrobial silver is embedded in and coated onto the polyurethane (Note example and col. 2, lines 5-15). Krall et al. does not include an organic bactericide or additives. Krall teaches the metal compounds are embedded in the plastic in the form of discrete particles. See column 2, lines 5-10 and claim 1. The product maybe extruded into shape. See column 4, lines 59-67. The instant cohesive and anti-tack properties of the film are inherent.*

The Office acknowledges that Krall et al. do not teach silver compounds.

The Office further states:

*JP 09002537 teaches a container exhibiting antimicrobial property incorporating silver based zirconium phosphate. JP teaches silver based zirconium phosphate provides less discoloration and deterioration. The reference teaches resin such as polyurethane (Note abstract).*

*It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Krall et al. and JP 09002537 and utilize the instant silver-based antimicrobial compound. One would be motivated to use silver based zirconium phosphate since it provides less discoloration and deterioration as taught by JP 09002537. Further, one would expect similar results since both teach silver-based polyurethane articles to provide an antibacterial effect.*

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With regard to inherency, Appellants respectfully note that MPEP § 2112 specifically states as follows:

*The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'*

Applicants respectfully submit that the polyurethane articles cited in the references do not necessarily exhibit the anti-tack characteristic as presently claimed. It is the presence of the silver-based antimicrobial compound "in discrete areas of said extruded film wherein at least some of said antimicrobial compound is present at and extending outward from said exterior surface of said extruded film and at least some of said antimicrobial is present within said interior of said extruded film" that yields the anti-tack properties, not the presence of the compound itself. Thus, the anti-tack properties result from particular structural features of the extruded film. A finding of inherency to support an obviousness rejection cannot be based on what would result due to optimization of conditions. See *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); See also *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981).

Furthermore, in relying upon the theory of inherency, the Office must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. *Ex parte Levy*, 17



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USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). In the present case it is the position of the Appellants that the Office has not provided such a basis. Accordingly, Appellants submit that the obviousness rejection should not be maintained and reversal of such rejection is respectfully requested.

**D. Claims 34 and 36 – 42 stand rejected under 35 USC 103(a) as being unpatentable over JP 11-028797 in view of JP 09002537.**

Claims 34 and 36 – 42 are rejected under 35 USC Section 103(a) as being unpatentable over JP 11-028797 in view of JP 09002537.

The Office's argument is as follows:

*JP teaches polyurethane film extruded with an antimicrobial agent, such as silver and antifungal agent (see page 3). The film is then coated onto a thermoplastic resin. The film has a thickness between 10-1000 microns and instant properties. The anti-tack and cohesive properties are inherent.*

The Office acknowledges that JP does not teach instant silver agent.

The Office further states:

*JP 11-028797 teaches a container exhibiting antimicrobial property incorporating silver based zirconium phosphate. JP teaches silver based zirconium phosphate provides less discoloration and deterioration. The reference teaches resin such as polyurethane. (Note abstract)*

*It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine JP 11-028797 and JP 09002537 and utilize the instant silver compounds. One would have been motivated to use silver based zirconium phosphate since it provides less discoloration and deterioration as taught by JP 09002537. Further, one would have a reasonable expectation of*

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*success in combining the references since both teach silver-based polyurethane articles to provide an antibacterial effect.*

Appellants rely on the discussion presented above with regard to inherency. In addition, it is respectfully argued that the film described as "extruded" on page three of the primary reference is referring to the moldings, and not to the antimicrobial polyurethane coat which is applied as a liquid. In support of this position, Appellants cite paragraph 19 of the primary reference which reads as follows:

*The polyurethane coating in this invention can be painted as 1 liquid type or a 2 liquid type. As the method of application, a spray method, a brushing method, a immersion coating method, electrostatic spray painting, etc. are employable.*

Thus, Appellants respectfully submit that the instant claims clearly describe the film as "extruded," which is a structural feature of the instant invention that is not taught or suggested by the cited references. Accordingly, since all the elements of a claim must be taught or suggested by the prior art in order to support a *prima facie* case of obviousness, Appellants submit that the obviousness rejection should not be maintained and reversal of such rejection is respectfully requested.

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**CONCLUSION**

For the reasons set forth above, Appellants respectfully urge that the novelty and obviousness rejections of Claims 34 and 36 - 42 are improper. Reversal of these rejections in this Appeal is hereby requested.

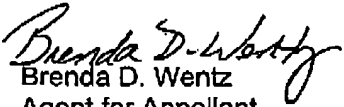
A copy of pending Claims 34 and 36 - 42 is attached as an Appendix hereto.

The Commissioner is hereby authorized to charge the Appeal Brief fee of \$500.00 to Deposit Account No. 04-0500. The Commissioner is also authorized to charge any additional fees that may be required, or credit any over-payment, to Deposit Account No. 04-0500.

Respectfully submitted,

January 24, 2006

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**VIII. CLAIMS APPENDIX**

1-33. (Canceled)

34. An extruded anti-tack polyurethane film exhibiting a thickness of from 10 to about 500 mils and having both an interior portion and exterior surface therein, said extruded film comprising a silver-based inorganic antimicrobial compound selected from the group consisting of silver zirconium phosphate compounds, silver-based zeolites, silver-based glasses, and any mixtures thereof in discrete areas of said extruded film wherein at least some of said antimicrobial compound is present at and extending outward from said exterior surface of said extruded film and at least some of said antimicrobial is present within said interior of said extruded film; wherein said film exhibits a tackiness less than that of the same type of extruded polyurethane extruded film without said silver-based inorganic antimicrobial compound present at and extending outward from the surface thereof; and wherein said extruded polyurethane film does not require the presence of any other anti-tack surface coatings or additives in order to exhibit such anti-tack properties.

35. (Canceled)

36. The extruded anti-tack polyurethane film of Claim 34 wherein said antimicrobial compound is at least one silver zirconium phosphate compound.

37. The extruded polyurethane film of Claim 34 wherein said formulation does not include any added organic bactericide compound.

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38. The extruded polyurethane film of Claim 34 wherein said extruded film exhibits a cohesive property with either itself or a different film of the same type as measured by a sliding block pull tension of below about 150 grams as measured by a sliding block friction procedure.

39. The extruded polyurethane film of Claim 38 wherein said extruded film exhibits a cohesive property with either itself or a different film of the same type as measured by a sliding block pull tension of below about 100 grams as measured by a sliding block friction procedure.

40. The extruded polyurethane film of Claim 39 wherein said extruded film exhibits a cohesive property with either itself or a different film of the same type as measured by a sliding block pull tension of below about 90 grams as measured by a sliding block friction procedure.

41. The extruded polyurethane film of Claim 40 wherein said extruded film exhibits a cohesive property with either itself or a different film of the same type as measured by a sliding block pull tension of below about 75 grams as measured by a sliding block friction procedure.

42. The extruded polyurethane film of Claim 41 wherein said extruded film exhibits a cohesive property with either itself or a different film of the same type as measured by a sliding block pull tension of below about 65 grams as measured by a sliding block friction procedure.

Claims 43-46 (Canceled)

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**IX. EVIDENCE APPENDIX**

NONE.

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**X. RELATED PROCEEDINGS APPENDIX**

NONE.